



**ASHRAE TC5.6 Control of Fire and Smoke
Draft Meeting Minutes
New York Meeting
January 2014**

These draft minutes have not been approved and are not the official, approved record until approved by this committee.

TC/TG/TRG No. TC5.6

TC/TG/TRG/TITLE: Control of Fire and Smoke

LOCATION: New York, NY

DRAFT

VOTING MEMBERS PRESENT	VOTING MEMBERS ABSENT	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE
Ahmed Kashef Chair		Valentina Nedelcu
Peter McDonnell vice chair		John Klote
		James Buckley
Paul Turnbull		Jeff Tubbs
John Clark		Dane Carey
Ed Koop		Bill Webb
Gary Andis		Kate McFarland
Bill Black		Kai Kang
Matt Davy		David Newman
David John		
Bill Black		Yuan Li
Robert Sibilski		Cyus Faris
Ray Sinclair		Michael Knipple
Gerald Kettler		Julian Rochester
George Hadjisophocleous		Greg Bradshaw
Kevin Chang		Byron Hagan
		Reinhard Seidl
		Amir Jokar

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The Committee Chair Ahmed Kashef called the meeting to order at 4:23:19 pm.

1. Identification of Voting Members

2. Chairman's Remarks – Ahmed Kashef

ASHRAE requests all members to please update their online biographies. The online bio provides current contact information to ASHRAE for important communication including correspondence with committee Chairs, Vice Chairs and Secretaries regarding meetings and schedules. It is important to maintain the information online for your membership. A new addition to the bio is a field for discipline.

ASHRAE started a new ExChange networking system for ASHRAE members. The ASHRAE ExChange can be found online through the ASHRAE website. Special thanks go out to the ASHRAE Electronics Communications Committee for all the work to make this launch possible

ASHRAE has started tracking committee activities including RTARS, seminars and conference papers. The tracking information will be used to evaluate participation level of each committee for a new outstanding committee award. Measurements are evaluated throughout the year

ASHRAE announces a new award for outstanding members from each committee. The award evaluates performance

The TC5.6 committee roster updates at the conclusion of New York meeting. Several voting members will be leaving and new members will be selected by Tuesday January 21st. The maximum number of voting members is 18 and the minimum is six with two non-quorum members. The current committee roster is located on the TC5.6 Control of Fire and Smoke website.

ASHRAE is looking for members to volunteer review research papers. (Several TC5.6 members volunteered).

Each TC can apply for workshops that include presentations with interaction between audience and presenters.

The 2015 Chicago ASHRAE conference will start a new life safety technical program track. This started in part at the request of TC5.6.

TCs that would like to use web streaming for remote members not in attendance can request the service before each conference.

3. Approval of Minutes from June 2013 Meeting (Denver Meeting)

- Matt Dave motion to accept Denver Meeting Minutes
 - John Klote Second
 - Minutes approved by unanimous vote.
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4. Subcommittee Reports

a) Research – Paul Turnbull

RP-1600 Make-up Air Velocity for Smoke Control in Atria (#2)

- Project is to further investigate the effects of make-up air in excess of 200 fpm on performance of an atrium smoke exhaust system.
- Research is being done by University of MD. Paul Turnbull had a few discussions by phone and email with Christine Pongratz (MS student from Fire Protection Engineering), Arnaud Trouve (her advisor), and Jim Milke regarding the project, to make sure it was going to give us useful data.
- Received a report of progress to date, and distributed it to the PMS.
- Christine and Jim were present at the Research Subcommittee meeting, and provided a report on the progress of the project so far and their plans for the next phase.
 - Phase 1 (June – Nov 2013)
- Completed Literature review of past studies.
- Completed grid sensitivity study. The results showed a 20 cm grid was appropriate for this study.
- Repeated past studies related to this subject from UMD (Kerber/Milke), and Carleton University (Hadjisophocleous) using FDS6.0. Simulations show comparable results.
- Extended domain in FDS to reduce oscillations of pressure and velocity for the wall mounted make-up air.
 - Phase 2 and 3 (Dec 2013 – Spring 2014)
- Matrix plan has been developed, defining tests to be run in various combinations of variables being investigated.
- First 27 runs have been completed and preliminary results have been compiled.
 - Spring 2014 plan
- Smoke layer position
- Currently processing FDS Results, and will adjust matrix for further variable testing.
- Complete remaining tests.
- Develop engineering tools using smoke layer height and mass flow rate. Current thinking is that this may just be a modifier to existing equation from mass flow rate, as a function of variables being investigated.
- Separation distance
- Currently developing FDS simulations for Heat flux data. This will be run with a smaller grid. The diagnostic plan for these FDS simulations is still in progress.
- Develop engineering tool using heat flux results to determine separation distance under airflow conditions. May be a modifier to existing separation distance equation.

RP-1447: (Performance of Pressurized Stairwells with Open Doors)

- Project is to investigate the need for compensating stairwell pressurization systems, to further investigate observations seen in RP-1203 (modeling study of stairwell pressurization systems).
- Project was awarded to National Research Council of Canada. Contract was signed in Nov 2013.
- Ahmed Kashef reported on the progress of the project on behalf of Gary Lougheed.
 - NRC will provide a detailed test plan to PMS for review by May.
 - Conduct preliminary fire tests in July-Sep 2014 to develop the fuel package for the 10-story tests. During this time, they will also conduct initial simulations for the tests, using a network model.
 - Setup and instrument the full-scale test facility in Sep-Nov 2014
 - Run the 10 full scale tests in Dec 2014 – Feb 2015.
 - Perform tenability analysis March – May 2015.
 - Prepare final report by Sep 2015.

New RTAR 1644 (Smoke Control in Long Atria):

- Main goal is to determine when existing calculations are no longer valid. Designer could then choose how to deal with it (treat as multiple atria, use CFD, etc.)
 - RTAR was reviewed by the RAC and was returned with comments requesting further revision and clarification. . Main comments:
 - Lacks details about deliverables
 - Please address budget concerns
 - Unclear how data would be used by ASHRAE
 - Project includes full-scale or scale-model testing and CFD modeling. Current cost estimate in RTAR is \$150K. Past projects suggest this is too low for full-scale testing, which agrees with RAC concerns. Need cost estimate from committee members familiar with this type work before it can be submitted.
 - Paul Turnbull was to revise the RTAR and forward it to John Klote for review. Revision was not completed due to lack of time.
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b) Program – Valentina Nedelcu

Valentina updated the TC on the Conference schedules for (September 26 deadline for submission of technical papers and abstracts for conference papers). For San Antonio, it is "Leading the way to better buildings".

• **Future meetings schedule updates:**

Seattle, June 28 – July 2, 2014

Website open www.ashrae.org/Seattle

Seminar and Forum Proposals are due February 13, 2013

- Track 1 Indoor Environment – Health, Comfort and Productivity
- Track 2 Research Summit
- Track 3 GSHP: State of the Art Design, Performance and Research
- Track 4 HVAC&R Systems & Equipment
- Track 5 HVAC&R Fundamentals and Applications
- Track 6 Standards, Guidelines and Codes
- Track 7 Refrigeration
- Track 8 Installation, Commissioning, Operation, Maintenance of Existing Buildings
- Track 9 Professional Skills

For the second time a Research Summit will be held.

New for Seattle is the option for a TC to submit a Workshop.

Workshops enable TC's and other ASHRAE committees to provide a series of short presentations on a topic requiring specific expertise.

Goal is to have at least one Workshop per track

Chicago 2015 Winter Conference.

www.ashrae.org/chicago

Conference Paper Abstracts are due March 24th, 2014

Technical Papers are due April 14, 2012

- Track 1 Systems and Equipment
- Track 2 Fundamentals and Applications
- Track 3 Industrial Facilities
- Track 4 Large Buildings: Mission Critical Facilities and Applications
- Track 5 Energy Efficiency

- Track 6 Life Safety
- Track 7 Design of Energy and Water Efficient Systems
- Track 8 Hospital Design and Codes

CEC encourages TC members who want to submit a program to consult the Track Chair for assistance in preparing a good abstract to help assure acceptance of presentation. Presentation uploads need to be timely and include the AIA Disclaimer and Learning Objectives. CEC Announces a Call for Reviewers. ASHRAE has a number of conferences coming up that includes papers and CEC is seeking help to review them.

Future Conferences

Annual 2015- Atlanta, Georgia; June 27-July 1

Winter 2016- Orlando, Florida; Jan 23-27

Annual 2016- St.Louis, Missouri June 25-29

1. New-York -Conference.

The conference has a building oriented theme. Tall building performance is featured for this conference.

Seminar 45: Life Safety issues with Tall buildings

Sponsor: 5.6 Control of Fire and Smoke, 9.12 Tall Buildings.



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Tuesday 1:30-3:00PM, Trianon Room

Track: Tall Buildings: Performance meets Policy.

Chair: William Webb

Speakers: John Klote, Jeffrey Tubbs, Steven Strege.

2. Future Proposed Programs

During the Program Sub-Committee Meeting each of the scheduled/proposed TC5.6 program events was re-visited in terms of: event type, proposed meeting date, topics, chair and speaker availability.

Seattle, June 2014

- **Conference Session**- Design Fire for Smoke Control in Tall Buildings and special applications.

Paul Turnbull – Moderator

Papers:

Ahmet Kashef - “Results of Fire Experiments to Quantify Residential Design Fires”

The Technical Paper was submitted and is in the Review Stage.

John Klote - “Design Fires in Tall Buildings”

Abstract was submitted and accepted and currently trying to submit the final papers. Paul to follow up with Tiffany on it.

Leon Wang –“A Hand Calculation Method of Smoke Movement through High Rise Building Shaft”

Another potential paper that has been accepted and is in the final review stage.

John will attend the TC 9.12 meeting to see if they have an interest on the topic and can contribute with papers.

- **Conference** - Natural Smoke Control Strategies.

Ray Sinclair – Moderator

Possible papers: Ray Sinclair, Jeff Tubbs. Ray might find another paper so we can have 3 papers submitted.

We are not aware of any submission made for this program.

Jeff Tubbs will try to contact Ray and get an update. But in light of these facts the proposed Program will likely not materialize and we are moving it in the future programs group.

Chicago, January 2015

- **Seminar or Conference** - Smoke Control in correctional facilities.

Collaboration with TC 9.4 Justice Facilities. Paper by Peter McDonnell. Moderator to be assigned. Peter is going to attend the TC 9.4 meeting and update us on the topic.

TC 9.4 seems to prefer a conference format.

- **Seminar** – Alternative Fire and Smoke Detection Technologies for Smoke Control Applications.

Paul Turnbull – Moderator

Possible papers by George Hadjisophocleous, Ahmed Kashef and Matthew Davy.

Availability of the speakers to be verified.

Atlanta Meeting Tentative Program:

Conference Papers:

Bill Black and Leon Wang

CFD of Smoke Management. Pressurized Stairwell, effects of open doors.

Other Proposed Programs:

- **Conference**– Special issues related to smoke control in large volume spaces.
Jeff Tubbs - Moderator.



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John Klote- Smoke control in Long Spaces.CFD capabilities/ limitations.

John Clark- Smoke removal in Shopping Malls. Case studies where was needed.

John will be able to attend until the summer of 2016. His paper will presented possible in Chicago with 9.8 TC seminar.

Future program topics.

Zone Smoke Control required in hospitals.

Balcony spill plumes?

3. Future Conferences

Winter 2014 – New York, New York; Jan 18-22

Annual 2014- Seattle, Washington; June 28- July 2

Winter 2015- Chicago, Illinois; Jan 24-28

Annual 2015- Atlanta, Georgia; June 27-July 1

c) Membership – John Clark

John noted that the committee needs a balance of membership and would like invite anyone interested in the committee activity. For those interested in becoming either a corresponding member or a voting member, please provide business card indicating preference as corresponding member or voting member and ASHRAE membership info. The committee is looking for representation from design engineers. John suggests guests to start as corresponding member, as voting member needs commitment for a 4-year cycle.

d) Handbook – Jeff Tubbs

The options for the next handbook will be either book and CD or online access. The graphics for the online handbook will include color graphics

John Clark noted that color graphics with flames do not transfer easily to black and white book graphics and one must be careful when transferring color graphics to black and white. John also noted sound is desirable to play videos or active graphics to inspire fire and smoke control



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e) **Standards –Ed Koop**

Aug. 9, 2013

ANSI/ASHRAE/ASHE Addenda *u, w, x, z,* and *ab* to ANSI/ASHRAE/ASHE Standard 170-2008, *Ventilation of Health Care Facilities*

Aug. 23, 2013

1st Public Review of BSR/ASHRAE/ASHE Addendum *ae* to ANSI/ASHRAE/ASHE Standard 170-2008, *Ventilation of Health Care Facilities*

This proposed addendum represents several changes resulting from coordination with the Guidelines for Design and Construction of Hospital and Health Care Facilities. It adds room design parameters to Table 7-1 (Design Parameters) for continued care nurseries, updates the references to Standard 62.1 from the 2007 to the 2010 edition, and removes a reference to AIA (2001) from Standard 170. It is intended to clarify more stringent requirements for the more serious exhaust airstreams within the standard.

Nov. 8, 2013

errata available on the ASHRAE website for:

ANSI/ASHRAE/ASHE Standard 170-2008, *Ventilation of Health Care Facilities*, dated November 7, 2013.

Nov. 22, 2013

1st Public Review of ASHRAE Guideline 1.4P, *The Systems Manual for Facilities*

This guideline provides procedures for producing a Systems Manual as a resource for training, operations, maintenance, and upgrading of facilities.

January 10, 2014

errata available on the ASHRAE website for:

ANSI/ASHRAE/ASHE Standard 170-2013, *Ventilation of Health Care Facilities*, dated January 8, 2014

f) **TC5.6 Web Site –**

The committee's website address is:

<http://tc56.ashraetcs.org>. The TC website is current.

g) **Smoke Management Software – Bil Webb / John Klote**

- Bill Webb motions to approve Smoke Management software
- Robert Sibilski seconds
- The motion passes by unanimous vote



6. Intra-Society Liaison Reports:

- a) TC1.4 (Control Theory and Application) – TC1.4 is Held Forum in Dallas, Gap in how to specify controls and how to integrate into IT systems. Information from the Dallas forum was used to update the guideline with two Clauses that address integration. The two clauses address; how to specify integration and how do you handle legacy systems. SGPC 13 issuing advisory public review of the entire guideline, likely to be issued in March 2014. All protocol specific information has been removed and is not included anymore.
- b) TC5.2 (Duct Design) - The Committee will meet on Tuesday. Ed Koop- There was nothing noted in meeting or minutes of the meeting from Denver directly affecting TC 5.6.
- c) TC5.9 (Enclosed Vehicular Facilities) – The committee is desperately asking for new members to join membership. RTAR 1715 Pressure transient in rail tunnels and underground stations, Submitted August 1, 2013
- d) TC5.10 (Kitchen Ventilation) – John Clark
Special Inspector is required for Smoke Control in Kitchen Grease systems.
- e) TC7.9 (Building Commissioning) – Jerry Kettler
- f) TC9.1 (Large Building Air Conditioning Systems) – No report.
- g) TC9.4 (Justice Facilities) – Peter McDonnell New TC is looking for new members.
- h) TC9.8 (Large Building Air Conditioning Applications) – need new Liaison. John Klote noted that TC9.8 would like input on revised chapter in Handbook. John will coordinate with Frank Mills by sending s draft of our chapter.
- i) TC9.10 (Laboratory Systems) – There is track about tall buildings presented. Session 9.12 will present with Jeff, John Klote and someone from Hughes.
- j) CIBSE (Chartered Institute of Building Services Engineers) – No Report, need new liaison
- k) NFPA 80 (Standard for Fire Doors and Fire Windows) – Ed Koop reported:

NFPA 80 -

- First Draft Meeting : Nov. 13,14 2013 Pittsburg, PA Minutes are available for review during TC5.6 meeting if desired
- ([Notes taken from meeting minutes available on NFPA Website](#))
All Public Inputs were addressed. Additional First Revisions were developed as needed. Additionally, Committee Inputs were developed. Under the new process, committee inputs do not get balloted. The committee is asked to review these prior to the Second Draft stage. For committee Inputs, see agenda attachment A.

Tasks groups were assigned to work on the proposed changes for the first draft. Rick Cravy from Ruskin is the chairman of the task group assigned to “**Dampers (Smoke and Fire Dampers, Acceptance and Periodic Testing).**” Their next meeting is to be on the west coast in the fall of 2014 for work on second draft.

Task Group members are:

- i. R.Cravy (Chair)
- ii. C.Holt
- iii. J.Peterkin
- iv. A.Yuen

NFPA Codes and Standards are available for the public online.

To review codes and standards online:

- [View the full list of NFPA's codes and standards.](#)
- Select the document you want to review.
- Select the edition of the document you want to review.
- Click the "Free access" link (under the document title)
- You will be asked to "sign-in" or create a profile to access the document in read-only format.

- l) NFPA 90A (Air Conditioning and Ventilating Systems) – Jim Buckley. Standard has been approved (starting a new cycle).
- m) NFPA 92 (Smoke Management) – Paul Turnbull



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- n) The two standards are now one standard "NFPA 92". It is now available as 2012 document. The Building Codes will need to be updated to reflect this. This can be raised by any individual to IBC. (IFC 2012 incorporates these requirements). NFPA is discussing adding vents to this standard.
- o) UL – Tim Orris No report.
- p) AMCA – Tim Orris No report
- q) The AMCA Damper Engineering Committee will be meeting with UL Staff to discuss a list of service issues with UL Staff at a face to face meeting in late February. The members have met with UL Staff to discuss the UL long term holding requirement (actuator testing) and also met with
- r) Intertek regarding ceiling damper testing in various ceiling designs. AMCA Standard 500-D was
- s) revised in 2012 to include a test method for damper thermal efficiency.
- t) SFPE – Jeff Tubbs
 - a. Guideline for substantiating models for their intended use. The new handbook is currently being developed to make it more user friendly and basis for PE Fire Protection exam. WPI is working
 - b. on a guideline for definition of design fire sizes.

7. Old Business

- No old business

8. New Business

- No new business

9. Adjournment

The meeting was adjourned at 7:00 pm.